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1 Detecting dynamic occlusion in front of static backgrounds for AR scenes 94%



Jan Fischer , Holger Regenbrecht , Gregory Barattoff

Proceedings of the workshop on Virtual environments 2003 May 2003

Correctly finding and handling occlusion between virtual and real objects in an Augmented Reality scene is essential for achieving visual realism. Here, we present an approach for detecting occlusion of virtual parts of the scene by natural occluders. Our algorithm is based on a graphical model of static backgrounds in the natural surroundings, which has to be acquired beforehand. The design of the approach aims at providing real-time performance and an easy integration into existing AR systems.

...

2 The virtual showcase as a new platform for augmented reality digital storytelling 87%



Oliver Bimber , L. Miguel Encarnação , Dieter Schmalstieg

Proceedings of the workshop on Virtual environments 2003 May 2003

In this paper we discuss a case study for which we applied a customized augmented reality display -the Virtual Showcase- as a new platform for digital storytelling. Different storytelling components are identified and examples for their specific realization are explained. Our case study focuses on communicating scientific information to a novice audience in a museum context. Addressing first user feedback, we describe our current efforts of improvement.

3 Real-time vision-based camera tracking for augmented reality applications 82%



Dieter Koller , Gudrun Klinker , Eric Rose , David Breen , Ross Whitaker , Mihran Tuceryan

Proceedings of the ACM symposium on Virtual reality software and technology

September 1997

4 Augmented & mobile reality: Consistent illumination within optical see- 80%

9/818,427



through augmented environments

Oliver Bimber , Anselm Grundhöfer , Gordon Wetzstein , Sebastian Knödel

Proceedings of the SIGGRAPH 2003 conference on Sketches & applications: in conjunction with the 30th annual conference on Computer graphics and interactive techniques July 2003

5

A widget framework for augmented interaction in SCAPE

80%



Leonard D. Brown , Hong Hua , Chunyu Gao

Proceedings of the 16th annual ACM symposium on User interface software and technology November 2003

We have previously developed a collaborative infrastructure called SCAPE - an acronym for Stereoscopic Collaboration in Augmented and Projective Environments - that integrates the traditionally separate paradigms of virtual and augmented reality. In this paper, we extend SCAPE by formalizing its underlying mathematical framework and detailing three augmented Widgets constructed via this framework: CoCylinder, Magnifier, and CoCube. These devices promote intuitive ways of selecting, examining, an ...

6

Session 2: environments: Incorporating dynamic real objects into immersive virtual environments

80%



Benjamin Lok , Samir Naik , Mary Whitton , Frederick P. Brooks

Proceedings of the 2003 symposium on Interactive 3D graphics April 2003

We present algorithms that enable virtual objects to interact with and respond to virtual representations, *avatars*, of real objects. These techniques allow dynamic real objects, such as the user, tools, and parts, to be visually and physically incorporated into the virtual environment (VE). The system uses image-based object reconstruction and a volume query mechanism to detect collisions and to determine plausible collision responses between virtual objects and the avatars. This allows o ...

7

The invisible person: advanced interaction using an embedded interface

77%



Thomas Psik , Krešimir Matković , Reinhard Sainitzer , Paolo Petta , Zsolt Szalavari

Proceedings of the workshop on Virtual environments 2003 May 2003

In this paper we describe an advanced user interface enabling even playing games in an immersive virtual environment. There are no common input devices, users presence in the environment, movements, and body postures are the available tools for interaction. Furthermore, a publicly accessible installation in the Vienna Museum of Technology implementing such an advanced environment is described. In this installation computers are completely hidden, and it is one of the most popular exhibits in the ...

8

Session P1: medical visualization: CPR: curved planar reformation








77%



Armin Kanitsar , Dominik Fleischmann , Rainer Wegenkittl , Petr Felkel , Meister Eduard Gröller

Proceedings of the conference on Visualization '02 October 2002

Visualization of tubular structures such as blood vessels is an important topic in medical imaging. One way to display tubular structures for diagnostic purposes is to generate longitudinal cross-sections in order to show their lumen, wall, and surrounding tissue in a curved plane. This process is called Curved Planar Reformation (CPR). We present three different methods to generate CPR images. A tube-phantom was scanned with Computed Tomography (CT) to illustrate the properties of the different ...

- 9** Real-time techniques for 3D flow visualization 77%
 Anton Fuhrmann , Eduard Gröller
Proceedings of the conference on Visualization '98 October 1998
- 10** Post-rendering 3D warping 77%
 William R. Mark , Leonard McMillan , Gary Bishop
Proceedings of the 1997 symposium on Interactive 3D graphics April 1997
- 11** A palmtop display for dextrous manipulation with haptic sensation 77%
 Haruo Noma , Tsutomu Miyasato , Fumio Kishino
Proceedings of the SIGCHI conference on Human factors in computing systems: common ground April 1996
- 12** Technologies for augmented reality systems: realizing ultrasound-guided needle biopsies 77%
 Andrei State , Mark A. Livingston , William F. Garrett , Gentaro Hirota , Mary C. Whitton , Etta D. Pisano , Henry Fuchs
Proceedings of the 23rd annual conference on Computer graphics and interactive techniques August 1996
- 13** The partial-occlusion effect: utilizing semitransparency in 3D human-computer interaction 77%
 Shumin Zhai , William Buxton , Paul Milgram
ACM Transactions on Computer-Human Interaction (TOCHI) September 1996
 Volume 3 Issue 3
 This study investigates human performance when using semitransparent tools in interactive 3D computer graphics environments. The article briefly reviews techniques for presenting depth information and examples of applying semitransparency in computer interface design. We hypothesize that when the user moves a semitransparent surface in a 3D environment, the "partial-occlusion" effect introduced through semitransparency acts as an effective cue in target localization—an ess ...
- 14** Resolving occlusion in augmented reality 77%
 Matthias M. Wloka , Brian G. Anderson
Proceedings of the 1995 symposium on Interactive 3D graphics April 1995
 Current state-of-the-art augmented reality systems simply overlay computer-generated visuals on the real-world imagery, for example via video or optical see-through displays. However, overlays are not effective when displaying data in three dimensions, since occlusion between the real and computer-generated objects is not addressed. We present a video see-through augmented reality system capable of resolving occlusion between real and computer-generated objects. The heart of our S ...
- 15** A survey of design issues in spatial input 77%
 Ken Hinckley , Randy Pausch , John C. Goble , Neal F. Kassell
Proceedings of the 7th annual ACM symposium on User interface software and technology November 1994
 We present a survey of design issues for developing effective free-space three-dimensional (3D) user interfaces. Our survey is based upon previous work in 3D interaction, our experience in developing free-space interfaces, and our informal observations of test users. We illustrate our design issues using examples drawn from

instances of 3D interfaces. For example, our first issue suggests that users have difficulty understanding three-dimensional space. We offer a set of strategie ...

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